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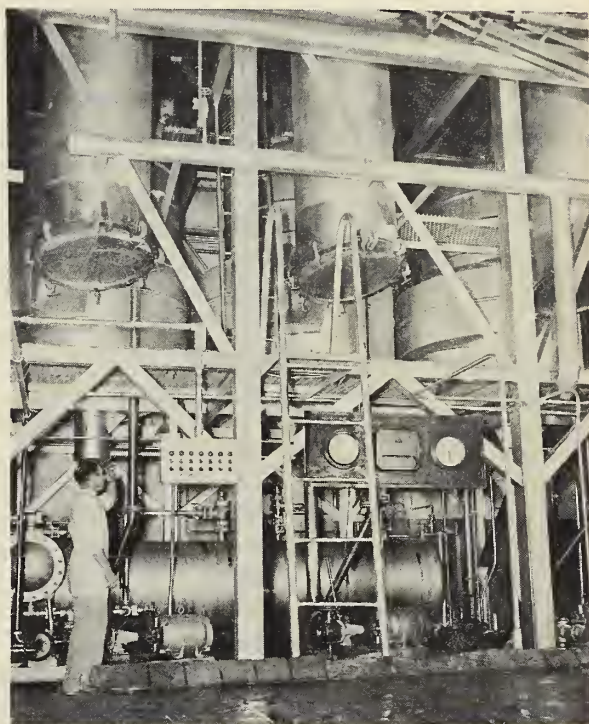
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ACQUIRING CITRUS FRUIT *For Concentrating* *by* PROCESSORS IN FLORIDA

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SUMMARY AND CONCLUSIONS

This study describes the various methods of paying for Florida citrus fruit used for processing concentrated juices. It is designed to appraise their economic effects in order to furnish growers and processors with a better basis for choosing methods of payment best suited to their individual needs, and to promote stability generally in the citrus industry.

Raw fruit used for concentrating is bought from growers, truckers, and fresh fruit packinghouses. Although most fruit is bought directly from growers, truckers are an important source of supply. Truckers, or intermediate handlers as they are sometimes called, have an important place in the industry as the capital investment and services they provide would be extremely costly to small growers.

There are four basic types of ownership transfer between grower and concentrator when the cash method of payment is used. They are: (1) Cash on delivery at the daily market price, (2) advance contract for grove of fruit at the daily market price on delivery, (3) advance contract at a fixed price per box "on tree" or delivered into plant, and (4) advance contract for grove of fruit for a predetermined lump sum. From the standpoint of financial risk most types of cash payments shift a large proportion of the risk from the grower to the concentrator. A grower's financial risk is terminated once the fruit is delivered to the plant or sold on the tree and changes in the retail price for concentrate do not affect his returns. However, a processor usually carries a large part of his accumulated inventory for a considerable period of time. Price changes at the retail level during this holding period may increase or decrease the financial worth of the processor's inventory, thus resulting in windfall profits or financial losses.

Members of citrus cooperatives in Florida, unlike growers who sell for cash, carry the risk of manufacturing and marketing frozen concentrated orange juice. Any changes in the retail price of the finished product is reflected in returns to growers. There is no shifting of financial risk by members of grower cooperatives from the time the crop is produced until the finished product is marketed. Assuming that a cooperative enterprise and a proprietary corporation are equally efficient, returns to members of cooperatives over a period of time should be somewhat larger than returns to growers who sell for cash. A cooperative grower-member should be paid for the cost of capital investments which are not borne by the grower who sells for cash. In addition, of course, the member of a cooperative presumably receives a return on the firm's processing and selling operations. Also, the return to a member of a cooperative should reflect a payment for risk incurred which otherwise would be assumed by a proprietary firm. However, quite probably the costs of risk bearing are the same to cooperative and proprietary concerns and returns to cover risk bearing by the two types of businesses would tend to balance out over a period of years.

Some fruit is sold to private proprietary processors under grower participation plans. Such plans are not new in agriculture. Sugar manufacturers

have utilized them for some time in acquiring the raw product. The objective of grower participation plans is to provide for sharing risks and profits of processing and marketing between grower and concentrator. Factors determining final returns to growers under a participation plan include (1) the price at which the processed product sells, (2) the level of processing and marketing costs for the particular concentrator to which the fruit is delivered, (3) the way in which costs and profits are shared, and (4) under certain conditions, the size of the initial payment to growers.

One of the shortcomings of present day grower participation contracts, in most instances, is the lack of any definition of what constitutes or what elements are included in costs of processing and marketing the finished product. However, the industry has become sufficiently standardized to permit fairly reliable estimates of cost of processing and marketing which would strengthen considerably grower participation contracts.

Under a grower participation plan, the concentrator is assured a fixed supply of fruit of a certain quality, requirements for working capital are reduced, the firm has greater flexibility in pricing the finished product and, in most instances, the financial risk is decreased. On the other hand, the grower is assured a market for his fruit. Since the grower by participating in risk bearing assumes responsibility for sharing losses as well as profits his return in any given season may be either higher or lower than if he had sold his fruit under some outright purchase arrangement.

It may be that one of the principal advantages of grower participation plans is the spreading or sharing of marketing risks and in this process perhaps somewhat reducing overall risks and their attendant costs. This element could make for a smoother functioning of the marketing mechanism between the producer and consumer and, perhaps, some smoothing of returns to producers and prices to consumers.

ACQUIRING CITRUS FRUIT FOR CONCENTRATING BY PROCESSORS IN FLORIDA

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In the last decade the annual output of oranges in Florida increased rapidly and this upward trend is expected to continue for the next several years. Planting of new groves was especially heavy during World War II and the postwar years have also been marked by substantial plantings, particularly of the Valencia variety.¹ Increased acreages and improvements in yield are responsible for the rise in annual output. With the postwar expansion in production the marketing structure for Florida oranges has shifted. Emphasis is now on marketing the crop in processed rather than in fresh form.

Frozen concentrated orange juice has become the most important single product in the Florida citrus industry. Before concentrated orange juice was produced, the major part of the crop was shipped to consuming centers and sold in fresh form. Since the introduction of concentrate, the percentage of raw fruit utilized through this outlet has risen each year. In 1951-52, about 32 million boxes or 40 percent of the crop was made into frozen concentrated orange juice. It is expected that between 45 and 50 percent of the 1952-53 crop will go into concentrate.

Certain economies accrue to the citrus industry and the general economy when a large part of the crop moves to consumers as a processed product. Substantial savings are made in the cost of transportation. The cost of shipping a dozen oranges from Lake Wales, Fla. to New York City is about 6 cents compared to a cost of 1 cent for moving an equivalent quantity in the form of concentrated juice.² In addition, some value is added by manufacturing into useful products the residue that remains when the raw fruit is processed.

Since the introduction of concentrate, increasing efficiencies have been made in processing and marketing the product. Technological advances have made possible larger yields of juice per box of raw fruit. The

Note: This report covers a part of the research undertaken on marketing southern citrus fruits. The Agricultural Experiment Stations of Florida and Texas and the Farm Credit Administration, the Production and Marketing Administration, and the Bureau of Agricultural Economics cooperated in the study.

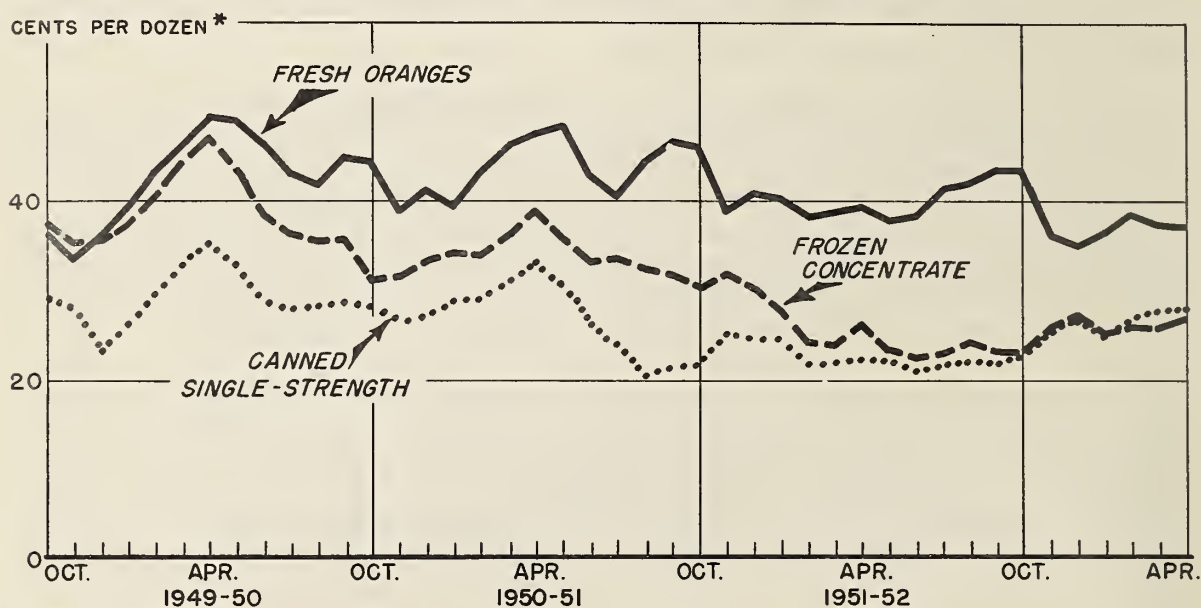
The authors wish to acknowledge the excellent cooperation shown by Dr. Henry Hamilton, Head, Department of Agricultural Economics, University of Florida, Gainesville, Florida and his staff and also by each concentrator in Florida who furnished statistics for use in the report.

¹The interior qualities of Valencia oranges make them highly acceptable for concentrating purposes.

²Hoofnagle, William S., and Ogren, Kenneth E., Shifts in Marketing Oranges From Fresh to Processed Form, U. S. Bur. Agr. Econ., Marketing and Transportation Situation, November 1951, pp. 7-13.

tremendous rise in output has helped to reduce further the cost per unit of processing. Marketing costs between processor and retailer have been decreased because of the larger quantities handled and the increased efficiencies of handling. The end result has been to provide consumers with a lower-priced product (fig. 1). As the price of concentrate is lowered the market tends to expand. Low-income families may be able to include concentrate in their diet as a stable item and thus become regular users of it. In addition, at lower prices, consumers may use larger quantities. Through the concentrate outlet, growers have benefited by receiving higher prices for their raw fruit than if they had been forced to market all the crop as a fresh or canned single-strength juice product.

FIGURE 1
PRICES OF ORANGE PRODUCTS
AVERAGE PRICES PAID BY HOUSEHOLD CONSUMERS



* FRESH ORANGE EQUIVALENT

SOURCE: NATIONAL CONSUMER PANEL OF INDUSTRIAL SURVEYS COMPANY

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PURPOSE OF STUDY

The purpose of this study is to describe the various methods of paying for Florida citrus fruit used for concentrating. It is designed to appraise their economic effects in order to furnish growers and processors with a better basis for choosing methods of payment suited to their individual needs, and to promote stability generally in the citrus industry.

Instability in prices of both the raw fruit and the finished product is harmful to growers and other segments of the industry. When retailers must make frequent adjustments in the price of a product, the reaction of the consumers is usually unfavorable so far as habitual purchases are

concerned. Continually changing the price pattern of a product tends to discourage any consistent pattern of consumption that might otherwise prevail. Thus, the overall demand for any product may be considerably reduced because of instability in prices at the retail level.

Extreme fluctuations in retail prices also tend to affect the orderly distribution of products. When prices of frozen concentrated orange juice are fluctuating, distributors and wholesalers are likely to lower their stocks to a minimum level. Under these conditions some retailers, especially the smaller independent stores, might find it hard to obtain a large enough supply of a specific brand-named juice. If extreme variability in price could be reduced at the different stages in the marketing channel, an increase in consumption and a more orderly disposition of the product would probably result.

SCOPE AND METHOD OF STUDY

In Florida 18 firms process frozen concentrated orange juice. In some instances a firm may operate two or more plants. Seven of these firms are cooperatively owned by Florida growers and the others are proprietary organizations. Some firms process only the frozen concentrated product but others process canned single-strength juice also. It is estimated that cooperatives produce approximately a third of the total concentrate. However, the proportion between cooperative and proprietary organizations may vary from season to season. The daily productive capacity of a concentrating plant may vary from a low of about 4,000 gallons to a high of 8,000 gallons. The potential daily productive capacity for the entire frozen-concentrate industry in Florida in 1951-52 was estimated at 358,000 gallons. Since then a substantial rise in daily productive capacity has occurred. In 1951-52, on an annual basis about 44,000,000 gallons of frozen concentrated orange juice was produced in Florida. The industry expects the 1952-53 output to exceed that of the previous year.

Production of frozen concentrated orange juice in Florida is limited to about 6 months in each crop-year. Processing of concentrate on a substantial scale usually begins in January and continues into June. In some crop-years, processing may begin earlier, depending upon the solids content of the fruit and, perhaps, upon the size of the previous year's inventory.³ The peak period in the manufacture of concentrate in Florida occurs sometime after Valencia oranges reach maturity. This variety of orange, which constitutes about 43 percent of the crop, is best adapted to concentrating.

The study covered the 1951-52 season and included 15 concentrating firms. General information was obtained by a personal interview with plant managers or those in charge of buying the raw fruit. Data were obtained on the method of payment or pricing policy in acquiring raw fruit. Other data pertaining to type of purchase and type of supplier were obtained as they were considered supplementary to the information concerning methods of payment.

³Solids content refers to the quantity of natural sugar found in raw fruit.

TYPE OF PURCHASE

A concentrator usually buys fruit on the basis of a box, solids, weight, or grove. He may buy on a box basis one week or during a given day and then switch to a different type of purchase. Factors such as variety, solids content, and price usually influence a processor's choice of type of purchase.

Table 2. - *Type of purchase used by 15 firms in buying raw fruit for concentrating 1951-52**

	Box	Solids	Grove	Total
	Percent	Percent	Percent	Percent
Season-----	40	46	14	100

* Estimated.

BY THE BOX

Many of the oranges used for concentrating are bought on a 90-pound box basis. It is estimated that about 40 percent of the fruit used for concentrating in 1951-52 was bought by the box. Oranges are usually delivered to the plant in bulk. There they are weighed and tested for quality and payment may be made in terms of the equivalent number of 90-pound boxes. Less distinction as to quality is made between lots of fruit when bought on this basis. Thus, a grower with fruit of only fair quality would be likely to profit by selling his oranges by the box.

MOVE TO BUY ON SOLIDS BASIS

Raw fruit delivered to the plant is tested by an inspector of the Florida State Department of Agriculture in accordance with standard testing procedures. The grower is given a statement as to the solids content of fruit delivered. If the concentrator is paying on a solids content basis, the number of pounds of solids along with price determines the grower's return. Within the last two seasons, processors have purchased a greater proportion of raw fruit on the basis of its solids content. A box of raw fruit may contain between 4 and 7 pounds of solids. As the season progresses, the solids content of fruit generally rises.

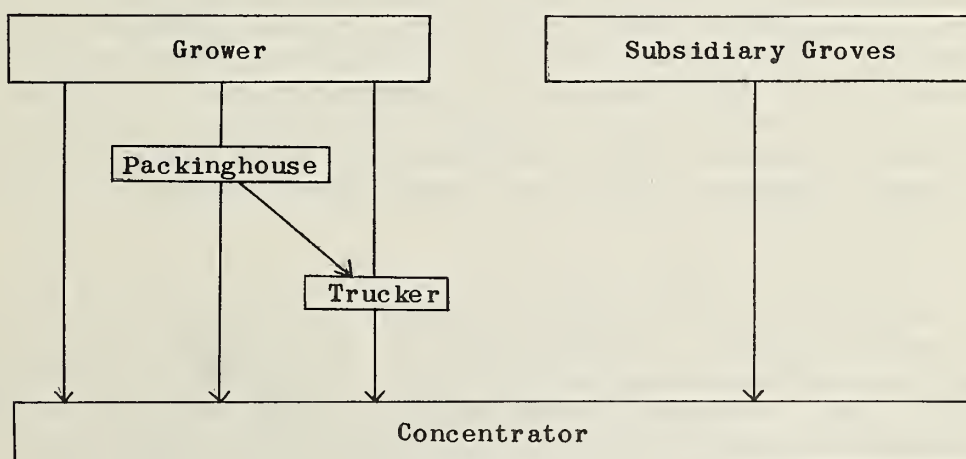
GROVE BUYING

Some concentrators acquire the fruit from entire groves. The extent to which raw fruit for concentrating was acquired on a grove basis is difficult to ascertain, but in 1951-52 about 14 percent of oranges were bought this way. The quantity of fruit bought on a grove basis in any given year is influenced considerably by the expected price situation. Growers refrain somewhat from making advance commitments when the price outlook is favorable. Several of the large proprietary concentrators have their own groves which provide them with a reserve supply of raw fruit.

TYPE OF SUPPLIER

Citrus fruit that is bought for concentrate is received directly from growers, truckers, and fresh-fruit packinghouses (fig. 2). Although most of the fruit is bought from growers, truckers and packinghouses are important sources of supply. The quantity of fruit from each source varies from season to season.

FIGURE 2
SOURCES OF SUPPLY OF RAW FRUIT FOR CONCENTRATING



GROWERS

A grower has several alternatives in marketing his oranges for concentrate. Fruit may be sold "on-tree" with the buyer doing the picking and hauling or the grower may contract for harvesting services and sell directly to the processor at the plant.

TRUCKERS

Some processors receive a sizable quantity of raw fruit from truckers or intermediate handlers during the course of a season. A trucker may make a verbal contract with a concentrator to furnish a certain quality and quantity of fruit at a specified price for a given time, usually no more than a week. Owners of small groves and those distant from concentrating plants are the truckers' principal sources of supply. In most instances, truckers buy the fruit "on-tree" either on a box or a grove basis and do the harvesting. Most truckers maintain a labor force and the facilities necessary for packing and hauling raw fruit. Truckers often harvest the fruit that concentrators buy under contract. Thus, truckers have an important place in the industry. In terms of capital investment the services they provide would be extremely expensive for small citrus growers. Furthermore, concentrators have at their disposal the additional facilities necessary to move large quantities of raw fruit from groves to processing plants.

FRESH-FRUIT PACKINGHOUSES

Fresh-fruit packinghouses often sell directly to concentrators. They may arrange with a processor to buy fruit which because of appearance is not acceptable for the fresh market but which has interior quality suitable for concentrating. Or a packinghouse may sell to a trucker who in turn sells to the concentrator.

METHODS OF PAYMENT FOR CITRUS FRUIT FOR CONCENTRATING

Cash Method

The cash method is one of three basic plans used by Florida concentrators in acquiring citrus fruit. This particular method has several variations and may be handled differently by each firm. At the outset of concentrating, about 1948, a larger part of the fruit was acquired through the cash method of payment than is currently the case. It is estimated that, in 1951-52, about 55 percent of the oranges processed into frozen concentrated juice were bought through the cash plan. Some proprietary concentrators bought all fruit and others acquired varying quantities on a cash basis, whereas cooperative firms acquired relatively little, if any, in this way.

Cash on delivery at daily market price. - A concentrator who buys fruit on the open market usually pays what is referred to by the trade as the "going market price." In most instances, this going price is usually thought of as determined on a daily basis. Under certain conditions the daily price may be a predetermined price of longer than a day's duration. Prices paid for raw fruit may change rapidly in certain parts of the season while at another period they may remain unchanged for a week or longer. The going price is a reflection of the supply-demand situation for oranges for all purposes; it is not the result of any one factor. This price also reflects the future price the concentrator expects to receive for the finished product. In other words, the cash price a concentrator is willing to offer for raw fruit at any time is conditioned by what he expects the retail price for concentrate to be when it is marketed.

Little, if any, difference exists in cash prices paid for raw fruit of the same quality on the open market among concentrators at any given time. This is partly because the proximity of concentrating plants gives growers flexibility in selling their fruit. Evidence indicates that growers react quickly to the slightest change from the going market price. According to reports from concentrators, a few cents above or below the going market price paid by an individual firm usually results in attracting or deterring raw fruit.

Much of the fruit acquired through the cash method is bought on a day-to-day basis. The grower's fruit is delivered to the plant where it is weighed, tested, and payment made immediately on some unit of value.⁴ Under this type of sale, a grower risks the possibility of not having an outlet for his fruit, especially when the crop is large. But in periods

⁴As indicated above, the unit of value may be based on weight, box, or solids.

of scarcity and rising prices, he receives the benefit of higher prices which he would have foregone had the fruit been previously committed at some predetermined price.

Advance contract for grove of fruit for a predetermined sum. - A variation to the cash-on-delivery at the going price for raw fruit is the so-called cash contract. Through this plan, concentrators acquire fruit by giving a grower a lump sum for all oranges within a specified grove. The concentrator usually picks and hauls the fruit. By this transaction, the grower may shift the risk of loss of fruit from freezing and wind damage. In assuming this risk, the concentrator may obtain the fruit at either a more or a less favorable price than if it were bought on the open market. In some instances, the concentrator may well overprice the fruit he buys through advance contract. But in this type of cash contract, several advantages accrue to the concentrator. The processor is better assured of an ample supply of a given variety or quality of oranges during the processing season. In addition, the concentrator attempts to hedge his position somewhat against periods of very high prices for raw fruit. A concentrator who holds fruit under an advance contract may use the fruit when prices are high, thereby withdrawing from the open competitive market but maintaining full-scale operations.

✓ Advance contract for grove of fruit at daily market price on delivery. - A variation in the foregoing cash operations exists when a concentrator contracts for all oranges in a grove but agrees to pay the daily market price on delivery instead of a predetermined lump sum. An agreement is ordinarily made between the two parties as to the marketing period and who will bear the risks of loss of fruit because of freezing or wind damage. By this cash contractual arrangement, the processor is assured of a given quality and a more dependable supply, barring unforeseen misfortune; and the grower is guaranteed a market for his fruit at the going price.

✓ Advance contract at a fixed price per box "on tree" or delivered into plant. - Many independent growers sell by the box "on tree" at a fixed price and often for future delivery. The grower receives the agreed upon price theoretically, regardless of whether the market has gone up or down by time of harvest. The grower assumes all the risk of droppage, weather hazards, and subsequent non-merchantability until the fruit is harvested.

✓ The contract between concentrator and grower may be written or verbal. In Florida, verbal contracts are often made and have proved rather satisfactory. But even less misunderstanding between growers and concentrators would arise if all types of cash contractual arrangements were placed in writing.

The usual methods of cash payment are shown in fig. 3. The percentage of fruit bought through the different types of cash payment varies from season to season, depending largely upon the expected price situation. An estimated 55 percent of the total raw fruit processed into concentrate in 1951-52 was bought through a cash method of payment.

From the standpoint of financial risk, most types of cash payments shift a large proportion of the risk from the grower to the concentrator.⁵ A grower's financial risk is terminated once the fruit is delivered to the plant or sold "on tree" and resulting changes in the retail price for concentrate do not affect his returns. A concentrator may carry a substantial part of his accumulated inventory for a considerable time. Changes in retail prices during this holding period may either increase or decrease the financial worth of the inventory. If the financial worth of the inventory increases because of rising retail prices the concentrator's position is enhanced. But unfavorable changes in retail prices during the inventory period may result in a substantial decrease in the value of the processed product. Losses on inventory could be of such proportion in any given year that the growers' market for fruit for concentrating in future seasons might be seriously jeopardized.

Cooperative Method

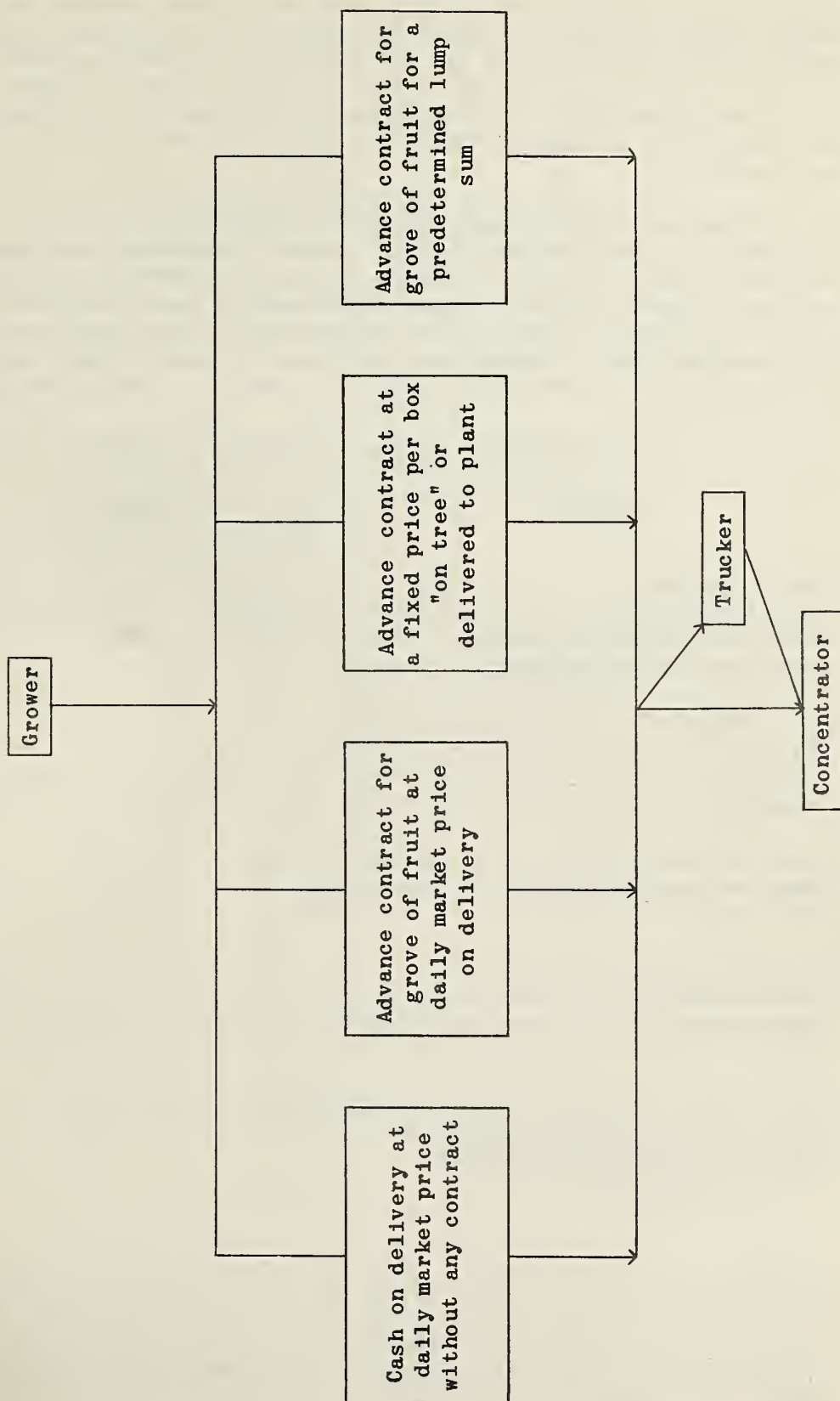
Florida citrus growers who belong to cooperatives ordinarily sell their entire crop through this outlet. Cooperatives often perform both farm-management practices and marketing functions for members. With the advent of frozen-concentrated orange juice, three outlets were made available through which a member's fruit might be marketed.

Marketing structure. - Growers usually are members of fresh fruit associations which are members, along with other local associations, of a citrus-processing cooperative. In some processing cooperatives both growers and cooperative packinghouses may be members. Ordinarily the local picks and hauls its members' fruit, which is then either delivered to the packinghouse or routed directly to the cooperative processing plant for processing into single-strength or frozen-concentrated juice. Fruit graded out at the packinghouse may also be sent to the processing plant. The local association decides upon the channel into which members' fruit is placed. In allocating fruit among fresh, frozen, and canned outlets, factors such as variety, quality, and demand in each outlet are considered.

Returns to growers for fruit used in concentrating are paid through the local associations. Various pooling plans are used in marketing the fruit. Some local associations place all the fruit of each variety in a common pool and each grower receives a proportionate share of the total amount received by the association from the sales of fresh fruit and fruit delivered to the processing cooperative. But in most instances local associations pool their sales of fresh fruit separately by variety, grade, and size, for the season or for a shorter period. Returns for the

⁵Risk is the uncertainty in regard to price, cost, physical loss or damage. Market risk is perhaps one of the most important forms included in the whole category of risk. By market risk is meant the unavoidable uncertainties caused by time elapses between the purchase and sale of commodities. In these periods, unpredictable changes often occur in prices and other market conditions. With the exception of hedging operations, it is rarely possible for a handler of agricultural products to conclude both his buying and selling transactions simultaneously so as to eliminate the element of risk.

FIGURE 3
TYPE OF OWNERSHIP TRANSFER BETWEEN GROWER AND
CONCENTRATOR UNDER THE CASH METHOD OF PURCHASING



processing cooperative are then pooled separately, usually on a variety basis. Often a grower is given an advance at the time of picking and hauling which customarily covers the cost of these operations. The advance may be in the form of a credit to the grower's account. Ordinarily fresh fruit pools are closed out at the end of the shipping season but concentrate or cannery pools may not be closed out until the product has been sold.

The processing cooperatives also pool their members' fruit. Pools may be established on a variety basis - early, midseason, and Valencia - or they may be on a definite time basis which corresponds roughly to the varietal season. Three of the cooperatives pool the fruit used for frozen concentrated orange juice separately, two combine the fruit used in processing frozen concentrate and single-strength juice, and one pools fruit marketed in fresh form with that going into frozen concentrate.

Table 3. - *Pooling practices of six processing cooperatives, 1951-52*

Practices	Cooperatives					
	1	2	3	4	5	6
Method of pooling:						
Concentrate separate-----		X		X		X
Concentrate and SS juice combined-----	X		X			
Concentrate and FF combined-----					X	
Type of pools:						(3)
Early-----	X	(2)	X			
Midseason-----	X	(2)	X	X	X	
Valencia-----	X	X	X	X	X	
Payment on the basis of:						
Number of boxes delivered-----	¹ X	X				X
Solid content-----	¹ X		X	X	X	
Processing charges on basis of:						
Actual cost-----	X	X	X		X	
Revenue charge-----				X		X

¹Early pool paid on box basis, midseason and Valencia pool on solids basis.

²Monthly pools for early and midseason.

³Season pool based on daily cash market.

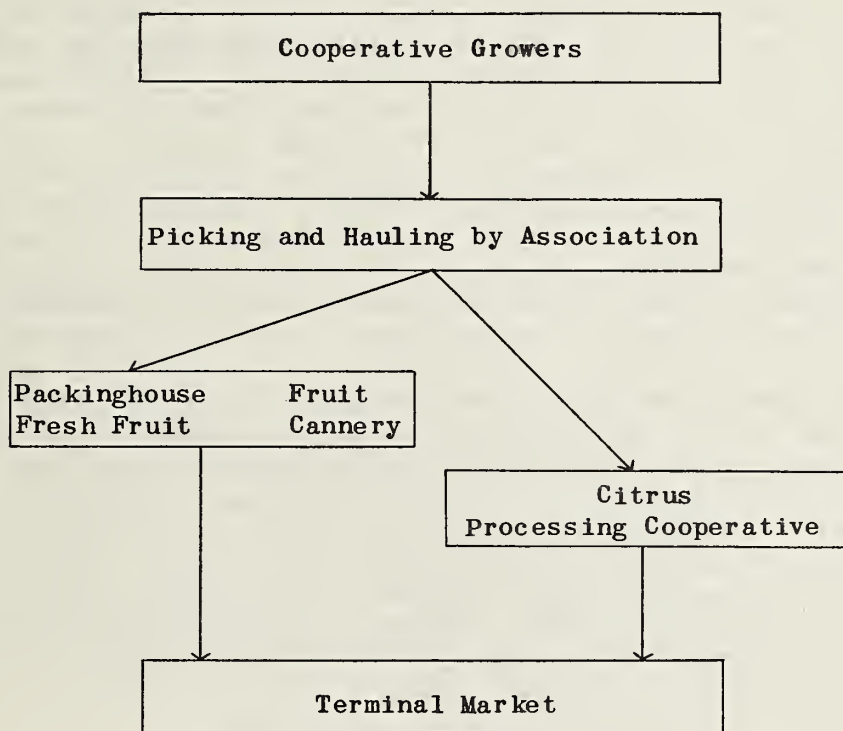
SS - Single Strength.

FF - Fresh Fruit.

The cooperatives that combine fruit for various outlets in one pool also make payments on the basis of the solids content of the juice. The various methods in use are designed to recognize the interior quality of the fruit and to pay the producer the average price from each outlet based on the quality of fruit delivered. One credits members with the

daily market price for the number of boxes delivered by each. Returns received from the sale of the produce after deducting expenses are then prorated to all members in the pool.

FIGURE 4
COOPERATIVE MARKETING STRUCTURE FOR ACQUIRING
CITRUS FRUIT FOR CONCENTRATING



Method of settlement with grower. - The finished product from each pool is kept separately until sold as different prices may be received for fruit from the various pools. The fruit from a grower-member may be placed in several different pools during the course of a season. Thus a member who has fruit in one pool may receive a higher or lower return for this particular lot of fruit than for fruit placed in another pool at a different time.

Frozen-concentrated orange juice manufactured from the pooled raw fruit may be sold in whole or in part at one or varying prices. The finished product from a given pool may be sold to different wholesalers over a period of months. Thus, the market price at any given time directly affects the per box return to the members of the cooperative.

Before final settlement for raw fruit placed in a specific pool, one or more advance payments may be made to the local associations. The first

payment may cover only the costs of picking and hauling or it may include a substantial part of the final price, depending largely upon the extent to which the product of a given pool has been sold. As much as a year may elapse between date of delivery and final payment for fruit, depending upon market conditions.

In order to maintain full-scale operation, it is sometimes necessary for cooperatives to buy fruit. A special quality or variety of orange not obtainable in sufficient supply from its members may be needed for blending purposes or to raise the solids content of the concentrate. Returns to cooperative growers. - Unlike growers who sell for cash, the members of a cooperative carry the risk of concentrating and selling. Grower-members indirectly maintain ownership of the product until it is sold to wholesalers or distributors and thus financial losses in inventory because of adverse changes in the retail price level fall directly upon the growers. Increases in the retail price also are reflected back to cooperative growers in increased returns. Members of the cooperative bear the costs of manufacturing frozen concentrated orange juice, of financing the inventory, and the price risks. There is no shifting of financial risk by growers from the time the crop is produced until the finished product is sold. Assuming that a cooperative enterprise is as efficient as a proprietary corporation, the return to a member of a cooperative over a period of time should be somewhat larger than the return to the grower who sells for cash. A cooperative grower-member should be paid for the cost of capital investments which are not borne by the grower who sells for cash. In addition, the cooperative grower-member as owner should receive a return on the cooperative's processing and selling operations. Also, the return to a member of a cooperative should reflect a payment for risk incurred which otherwise would be assumed by a proprietary firm. However, quite probably the returns for risk and cost of risk as between the two different types of firms would tend to balance over a period of years.

Grower Participation Plans

Within the last two seasons some proprietary manufacturers of frozen concentrated orange juice have introduced various forms of grower-participation plans. Such plans are not new to agriculture. Sugar manufacturers, for example, have utilized them for some time in acquiring the raw commodity. Grower-participation plans are designed to provide for a sharing of the risks and profits of processing and marketing between grower and concentrator. Grower response to plans now offered cannot be readily evaluated, although there are indications that response to some of the plans is rather favorable.

Operation of plans now in effect. - Generally speaking, under plans now in effect, a grower is given an initial payment for raw fruit delivered to the plant and final settlement is made after the concentrate is marketed or before the beginning of the next season. Growers share in any profit that may accrue to the firm from the manufacture and sale of the finished product. Some of the participation plans make an initial

payment to growers based on a fixed price. Others make an initial payment which is figured on a certain percentage of the going cash price.

The advantages or disadvantages of various methods of establishing the initial payment may depend upon the cost relationships of the individual firm, the size of the initial payment as a proportion of the final return for the product, and the relationship between the initial payment and the going cash price. Assuming that all firms had the same costs and that costs and profits were divided in the same way between concentrators and growers, the size of the initial payment made by the concentrator should have no effect on the total return received by the grower for his raw products. This would be the case for different growers selling under various plans and would be true as between firms.

However, since variations exist in the cost of processing and marketing among firms and profits are shared differently, the final returns to growers are dependent upon the price at which the individual firm sells its product, the level of processing and marketing costs for the particular concentrator to which the fruit is delivered, the way in which costs and profits are shared and, under certain conditions, the size of the initial payment.

A concentrator may set the fixed initial payment above the going market price since participation plans are announced before the harvest season begins. The relationship between the initial payment and the final value of the product depends largely on the accuracy of market data available which would indicate the amount of the product which might be sold and at what price the consumer would take given quantities. The relationship between the costs of individual firms and the final payment for the product needs further study to establish basic principles for participation plan operation. The narrower the margin between the initial payment and the final value return for the product the less likelihood there is of difference of opinion between the grower and the processor concerning the adequacy of processing and marketing services.

Processor's position under a participation plan. - A concentrator's first requisite is an adequate supply of fruit of a certain quality. This is because of the large investment in facilities and the limited seasonal period of operation. Otherwise, the per unit cost of concentrating is so large that a firm would be unable to compete successfully in the industry. Operating under a grower-participation plan, the processor is assured of a certain quantity and variety of fruit, barring unforeseen weather conditions. His requirement for working capital is somewhat reduced as he has less money invested at any one time in raw fruit unless the initial payment is above the cash market price. This factor permits greater flexibility in the firm's operation. At the same time, costs to processors are reduced as growers partially finance the inventory until the frozen-concentrated orange juice is sold. The extent of grower-financing depends upon the difference between the initial payment and the going cash price at the time the raw fruit was acquired. From the standpoint of risk, the processor assumes what may be a favorable or unfavorable position when a fixed or an absolute initial payment is

guaranteed growers. In the event that the guaranteed fixed initial payment to growers may be in excess of the going market price, the concentrator assumes an unfavorable risk position. But when the initial payment to growers is below the going cash price for raw fruit the processor's financial risks are reduced. If the firm should suffer a loss on the sale of the finished product, the grower would share this loss by receiving a smaller return per unit than he would have received if the crop had been sold for cash.

In most grower-participation contracts, the concentrator is granted the privilege of scheduling a grower's fruit for processing. Under these circumstances, when a firm buys part of the fruit for cash and acquires the remainder through a participation plan, it can more readily adjust its purchases to market conditions.

A concentrator can be more flexible in pricing the finished product when raw fruit obtained through a participation plan is used. Any adjustment in prices to meet competition is reflected in returns to both concentrator and producer.

Grower's position under participation plan. - The assurance of a market for a grower's fruit as guaranteed through a participation plan is significant. This factor may loom large in the mind of a grower when a surplus of fruit appears likely. Under a participation plan with a fixed initial payment, a grower is guaranteed a minimum floor price for all contracted fruit. In some seasons, the guaranteed initial payment might coincide closely with the season's cash price.

Since the grower by participating in risk bearing assumes responsibility for sharing losses as well as profits, his returns in any given season may be either higher or lower than if he had sold his fruit under some outright purchase agreement. As the grower carries some of the risk involved in concentrating, his return per box should be larger than if he had sold his crop for cash. In the last two seasons growers selling under participation plans have received a slightly larger return for their raw fruit than if they had sold for cash. The return per box under a participation plan should be commensurate with the degree of risk the grower holds over and above that associated with production of raw fruit.

Desirable features of a participation plan contract. - A grower participation contract should be bilateral, that is, the contract should represent equally the interests of both grower and concentrator. The contract should be equally flexible for both parties and should be written so that it is easily understood. Responsibilities of growers and concentrator should be spelled out in detail. In addition, several features of the contract should receive special attention. Among these is inclusion of some type of cost control, such as a range of cost for processing a gallon of frozen-concentrated orange juice.

Estimates of production costs for a given unit of the finished product for a season ahead should be relatively easy for established firms, such

as those currently offering grower participation agreements. With a satisfactory estimate of volume available a firm should be able to include in the contract a range of processing costs since wages and salaries, depreciation, materials, and other factors normally included in cost can be fairly well determined in advance. Including a definite cost statement would do much to eliminate grower criticism of participation plans.

A feature that might be clarified somewhat is the determination and definition of what constitutes profit under a grower-participation plan. The term "profit" is rather nebulous and may be interpreted differently by growers and concentrators.

Future of grower-participation plans. - The extent to which grower-participation plans are successful in the concentrating industry depends chiefly upon the returns to growers. If growers receive a larger net return by selling through grower-participation plans, these plans may emerge as a predominant method of payment. But if grower returns over several seasons are not equal to or above returns paid through cash or other methods, growers' participation plans will be short-lived. Other considerations that affect overall acceptance of these plans include the way in which differences or misunderstandings are handled or adjustments made when they arise.

